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Actigraphy in patients with depression and schizophrenia concerning activity levels, sleep estimation and circadian rhythm

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Objective: Disturbances of the rest-activity rhythm and sleep are frequent in psychiatric patients. A quantitative method for measuring both is provided by actography, which was applied in the present pilot study to examine activity levels, rest-activity rhythm and sleep in depressive and schizophrenic patients.

Patients and Methods: Six inpatients, four with major depression and two with schizophrenia (DSM-IV criteria), were included. The depressed patients were further divided into two subgroups according to Hamilton Depression (HAMD) values (two patients in each group), severely depressed (HAMD>18) and slightly depressed (HAMD<18) respectively. All patients underwent 72-h actographic monitoring and were during the second day evaluated by a number of psychiatric rating scales. The same procedure was repeated after four weeks of treatment for the severely depressed patients.

Results: The schizophrenic patients showed the highest night activity and the lowest day/night activity ratio with irregular activity levels during the day and more active phases also at night, in comparison with the different groups of depressed patients. Concerning the various sleep parameters, the schizophrenic patients were more disturbed in almost all parameters compared to the depressive patients. Among the depressed patients, a clear difference was seen between slightly depressed patients and severely depressed patients. The slightly depressed patients had higher average and day activity levels and a higher day/night activity ratio than the severely depressed patients. After four weeks of antidepressant-treatment, the severely depressed patients showed an increased day/night activity ratio suggesting a trend to a normalisation of circadian rhythm.

Conclusion: Actography seems to be a useful and easily applicable method to measure activity levels and rest-activity rhythm disturbances in depressive and schizophrenic patients. The method may provide new information about circadian rhythm in psychiatric patients concerning diagnosis and treatment monitoring and, therefore, deserves further investigation.